

Unit 2 Atomic Structure

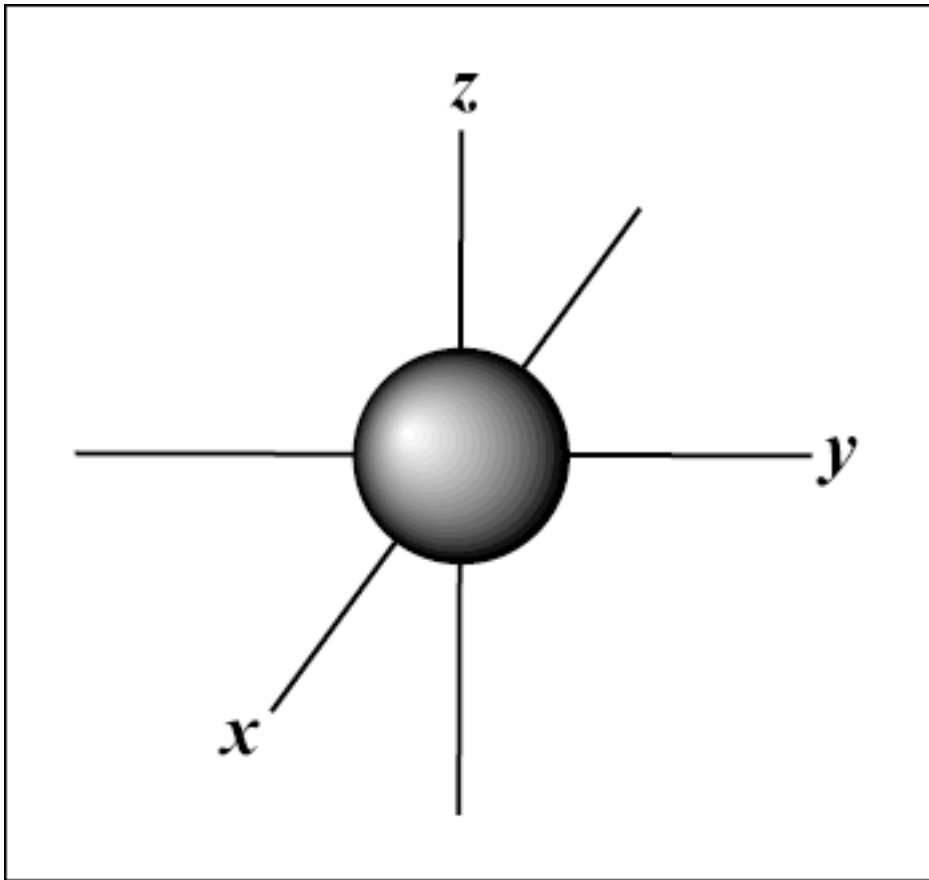
Electron Configuration

Orbitals – region around the atom where an electron is likely to be found.

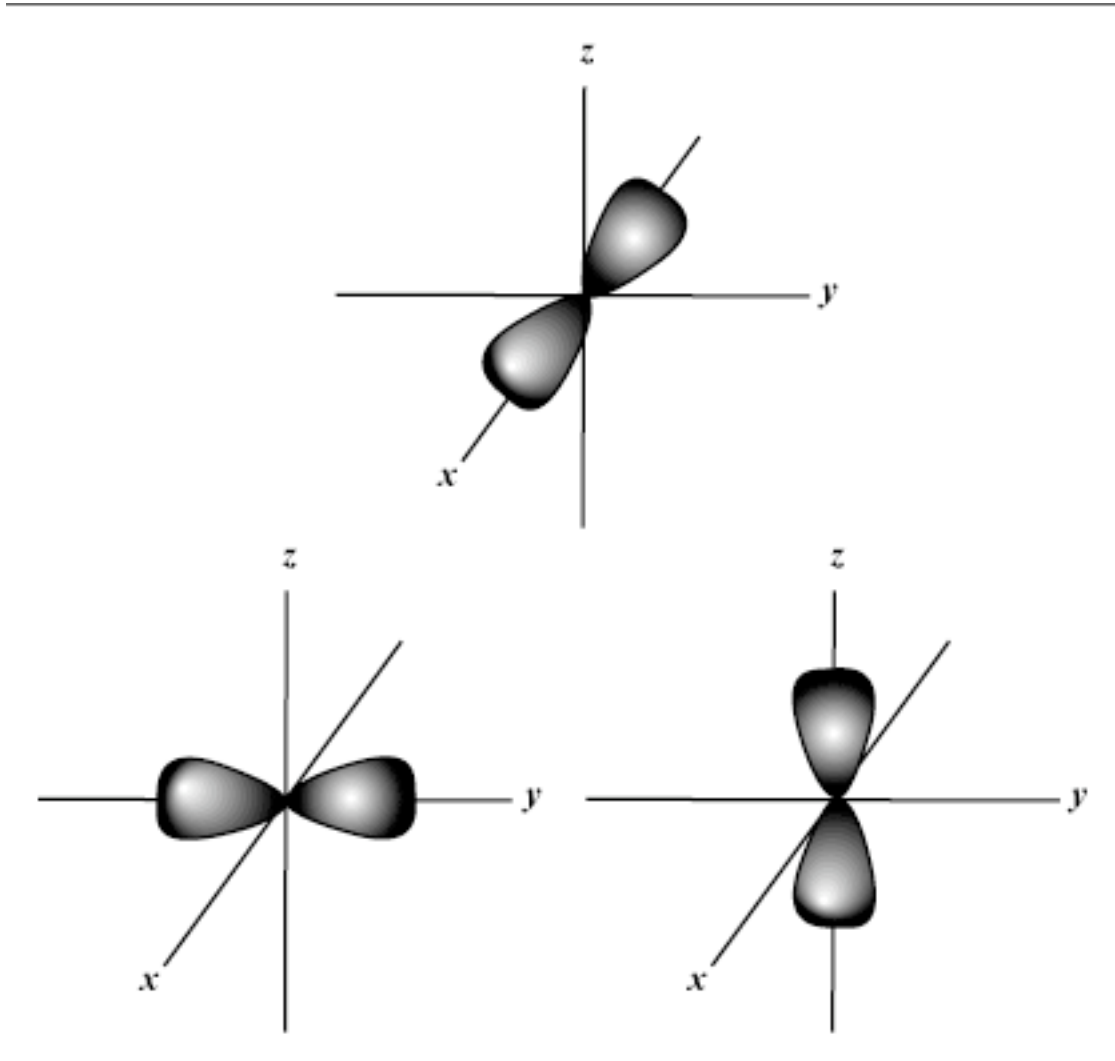
“ _____ ”

3 Types of Orbitals (actually there's 4, but we'll only talk about 3):

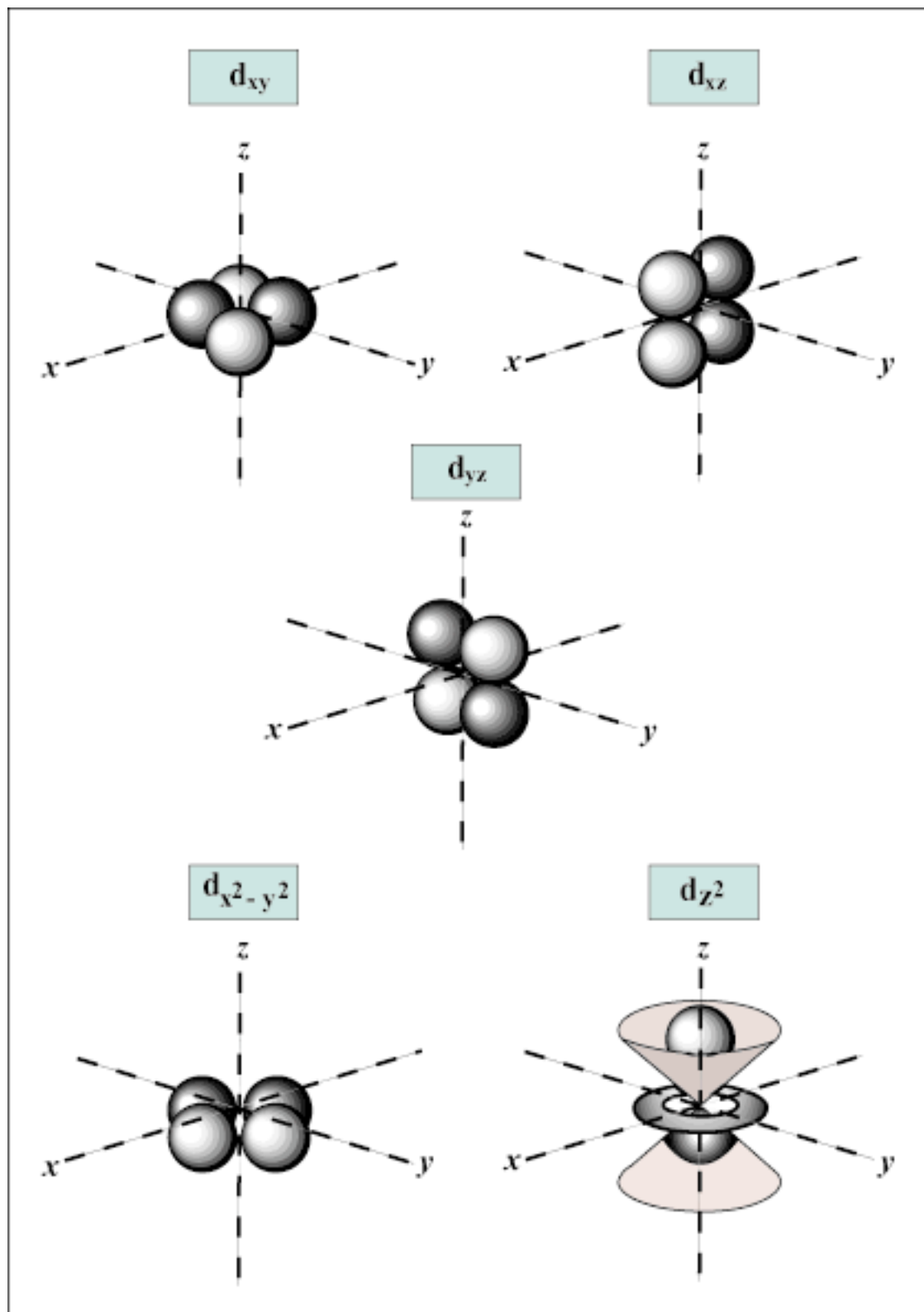
S-Orbital: _____ per energy level, can hold up to _____ electrons total



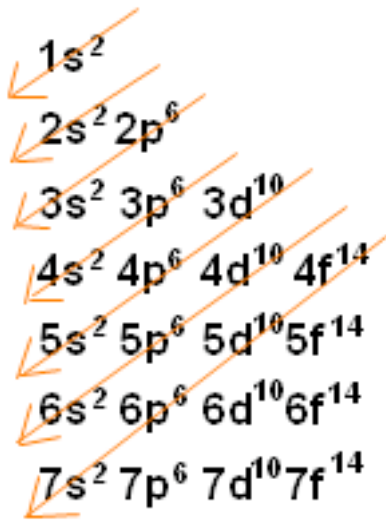
P-Orbital: _____ per energy level, can hold up to _____ electrons total



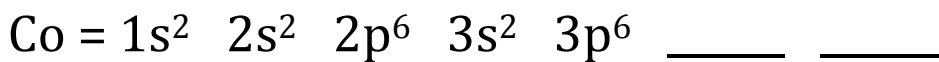
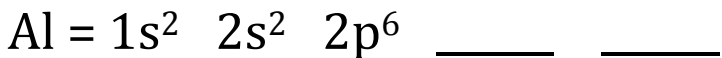
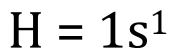
D-Orbital: _____ per energy level, can hold up to _____ electrons total



Electron Configurations Diagonal Rule:



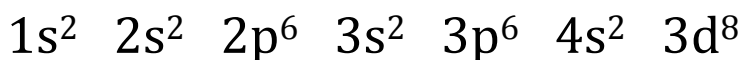
Write the e- configuration for He, Al, and Co



Short Hand Method for e- Configuration:

Use the noble gas preceding the element. The noble gas represents the inner shell electrons and the nucleus.

Example: Ni has 28 e-



Orbital Notation:

Each “box” represents an orbital. Remember, each orbital may hold, at the most, _____ and they must have opposite spins (denoted by arrows).

$s^2 =$ _____ $p^6 =$ _____ $d^{10} =$ _____

f = 7 orbitals

Hund’s Rule: Each orbital of a sublevel must have one e- before any pair up.

Write the orbital notation for oxygen:

$1s^2$	$2s^2$	$2p^4$	shorthand [He]	$2s^2$	$2p^4$
_____	_____	_____		_____	_____